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position of the guard cells, the maximum diffusion capacity of the pore being seldom (if ever) utilized. A rhythmic variation in the transpiration rate was found to be independent of the stomatal rhythm. As to the latter, LLOYD finds that, aside from the indirect effect of high relative humidity in reducing the water loss and so favoring the opening of the stomata, there is no relation between the humidity and the position of the guard cells. He finds no closure of the stomata in anticipation of wilting, but during wilting a slow closure, without the preliminary opening attributed to them by FRANCIS DARWIN.

LLOYD also attacked an interesting problem in the supposed photosynthetic activity of the guard cells. He finds evidence of amyloplastic but none of chloroplastic activity, and concludes that the movements of the guard cells are related to their accumulation and dissolution of starch derived from the chlorenchyma, rather than to any photosynthetic products of the guard cells themselves.

This is a careful and thorough piece of work, highly creditable to the laboratory from which it comes. The experimental evidence is now at hand supporting conclusions which have been held by some physiologists for some years as highly probable on purely physical grounds.—C. R. B.

The timbers of commerce.—A second edition of BOULGER'S *Wood*, revised and enlarged, has appeared.⁸ It deals with 1000 kinds of wood, and includes most of those known in general commerce. The first part (pp. 121) discusses wood in general, under such topics as origin, structure, development, classification, defects, selection, uses, supplies, and tests. The second part presents the woods of commerce, giving in each case the source, character, and use. The 48 plates are from photomicrographs of sections, and are intended to show the distinctive microscopic features. Such a book is encyclopedic, and therefore for its purpose it is extremely useful. The demand for a second edition speaks well for the favorable reception of the first.—J. M. C.

Knuth's Handbook.—The second volume of DAVIS' English translation of this encyclopedic work has just been issued by the Clarendon Press.⁹ The original volumes and the first volume of the translation were reviewed in this journal,¹⁰ so that the general scope and character of the work have been noted. The present volume includes observations on flower pollination made in Europe and in the arctic regions, and is a great mass of observations upon species ranging through the natural orders, from "Ranunculaceae to Stylidiaceae." Such a book cannot be reviewed, for it is an encyclopedia. It can only be announced, and

⁸ BOULGER, G. S., *Wood, a manual of the natural history and industrial applications of the timbers of commerce.* 8vo. pp. xi+348. *pls.* 48. London: Edward Arnold. 1908. \$4.20.

⁹ KNUTH, PAUL, *Handbook of flower pollination.* Translated by J. R. AINSWORTH DAVIS. Volume II. 8vo. pp. viii+703. *figs.* 210. Oxford: Clarendon Press. 1908. Half morocco 35s.; cloth 31s. 6d.

¹⁰ BOT. GAZETTE 28:280. 1899; 28:432. 1899; 42:494. 1906.